stainless steel in large fast reactors because of its low neutron absorption cross section. Limited alloy development and fabrication of specific vanadium alloys are discussed.

Recovery, recrystallization, and grain-growth data for zirconium and Zircaloy are discussed as a function of cold work, composition, annealing time, temperature, and annealing atmosphere. The influence of fabrication variables on mechanical properties and strain anisotropy in Zircaloy are presented.

Brief descriptions of the following are also provided: fabrication and testing of austenitic stainless steel cladding containing 300 parts/million boron; evaluation of stainless steel performance in the first Yankee Core; hot coestrusion of UO_2 and stainless steel; extrusion of ribbed beryllium cladding; coestrusion of Zircaloy/stainless steel tubing and tubular joints; pressure bonding; welding of spacer ribs to Zircaloy cladding; tungsten tube development for application in special reactors; improvements in Zircaloy tube fabrication; new zirconium alloys for water-reactor cladding; Zircaloy-clad elements swaged to reductions in area in excess of 40% and end-closure fabrication.